

=> fil reg  
FILE 'REGISTRY' ENTERED AT 17:09:26 ON 23 JUL 2010  
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STRUCTURE FILE UPDATES: 22 JUL 2010 HIGHEST RN 1233544-26-7  
DICTIONARY FILE UPDATES: 22 JUL 2010 HIGHEST RN 1233544-26-7

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH January 8, 2010.

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REGISTRY includes numerically searchable data for experimental and  
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experimental property data in the original document. For information  
on property searching in REGISTRY, refer to:

<http://www.cas.org/support/stngen/stndoc/properties.html>

=> fil hcap  
FILE 'HCAPLUS' ENTERED AT 17:09:32 ON 23 JUL 2010  
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FILE COVERS 1907 - 23 Jul 2010 VOL 153 ISS 5  
FILE LAST UPDATED: 22 Jul 2010 (20100722/ED)  
REVISED CLASS FIELDS (/NCL) LAST RELOADED: Apr 2010  
USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Apr 2010

HCAplus now includes complete International Patent Classification (IPC)  
reclassification data for the second quarter of 2010.

CAS Information Use Policies apply and are available at:

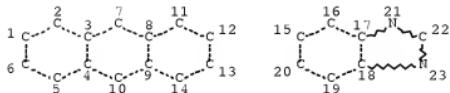
<http://www.cas.org/legal/infopolicy.html>

This file contains CAS Registry Numbers for easy and accurate  
substance identification.

=> d 122 que stat

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L3 STR



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 DEFAULT ECLEVEL IS LIMITED

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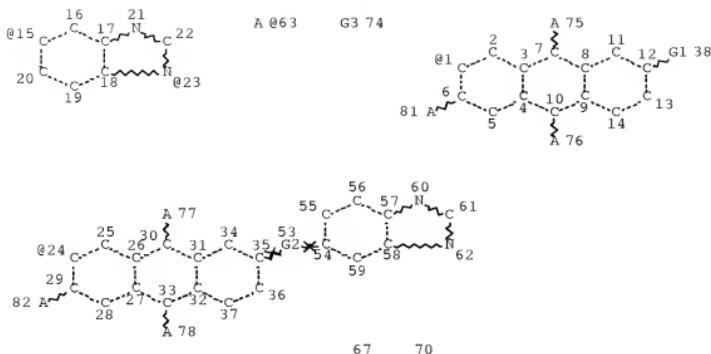
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STEREO ATTRIBUTES: NONE

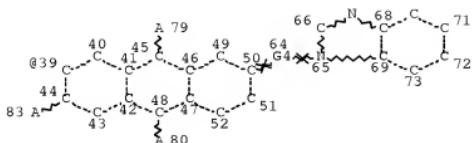
L5 SCR 2049

L7 2514 SEA FILE=REGISTRY SSS FUL L3 NOT L5

L15 STR



Page 1-A



Page 2-A

VAR G1=15/23

REP G2=(1-8) 63

VAR G3=1/24/39

REP G4=(1-8) 63

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DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RSPEC I

NUMBER OF NODES IS 83

STEREO ATTRIBUTES: NONE

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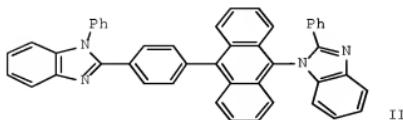
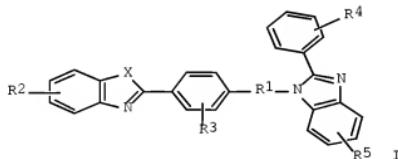
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 L22 3 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON (L20 OR L21)

=> d ibib abs fhitstr hitind l22 1-3

L22 ANSWER 1 OF 3 HCAPLUS COPYRIGHT 2010 ACS on STN  
 ACCESSION NUMBER: 2010:64014 HCAPLUS Full-text  
 DOCUMENT NUMBER: 152:215287  
 TITLE: Preparation of benzimidazole derivatives for  
 organic electroluminescent device  
 INVENTOR(S): Choi, Dae Hyeok; Kim, Dong Ha; Nam, Hyeon Guk;  
 Kim, Dae Seong; Park, Jeong Cheol; Kim, Gi Won;  
 Baek, Jang Yeol; Park, Yong Uk; Yoo, Han Seong  
 PATENT ASSIGNEE(S): Duksan Hi-Metal Co., Ltd., S. Korea  
 SOURCE: Repub. Korean Kongkae Taeho Kongbo, 18pp.  
 CODEN: KRXXA7  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Korean  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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KR 2010004727	A	20100113	KR 2008-65063	200807 04
PRIORITY APPLN. INFO.:			KR 2008-65063	200807 04

OTHER SOURCE(S): MARPAT 152:215287  
 GI



AB Title compds. I [X = N-R6, S or O; R1 = (un)substituted aromatic hydrocarbon, (un)substituted RaNRbRc or RaRbSiRcRd (sic); R2-R6 = H, (un)substituted

aliphatic hydrocarbon, (un)substituted aromatic hydrocarbon, etc.; Ra-Rd = H, alkyl or aromatic hydrocarbon) were prepared. For example, reaction of N-phenyl-benzene-1,2-diamine with 4-bromobenzoyl chloride followed by cyclization using TsOH·H<sub>2</sub>O and Pd(PPh<sub>3</sub>)<sub>4</sub>-catalyzed coupling reaction with 10-(2-phenylbenzimidazol-1-yl)anthracene-9-boronic acid afforded compound II.

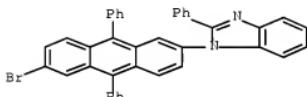
Electroluminescent device comprising II showed 16.1 cd/A.

IT 1206770-79-7P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);  
RACT (Reactant or reagent)  
(preparation of benzimidazole derivs. for organic electroluminescent device)

RN 1206770-79-7 HCPLUS

CN 1H-Benzimidazole, 1-(6-bromo-9,10-diphenyl-2-anthracenyl)-2-phenyl-  
(CA INDEX NAME)



IPCI C07D0403-08 [I,A]; C07D0403-10 [I,A]; C07D0403-00 [I,C\*]

IPCR C07D0403-00 [I,C]; C07D0403-08 [I,A]; C07D0403-10 [I,A]

CC 28-9 (Heterocyclic Compounds (More Than One Hetero Atom))

Section cross-reference(s): 74

IT 2620-76-0P 359427-13-7P 528609-98-5P 1206770-77-5P

1206770-78-6P 1206770-79-7P 1206770-80-0P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);  
RACT (Reactant or reagent)  
(preparation of benzimidazole derivs. for organic electroluminescent device)

IT 1206770-73-1P 1206770-74-2P 1206770-75-3P

1206770-76-4P

RL: SPN (Synthetic preparation); TEM (Technical or engineered

material use); PREP (Preparation); USES (Uses)

(preparation of benzimidazole derivs. for organic electroluminescent device)

L22 ANSWER 2 OF 3 HCPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2009:708353 HCPLUS Full-text

DOCUMENT NUMBER: 151:19803

TITLE: Novel organic electroluminescent compounds and  
organic electroluminescent device using the same  
Lee, Mi Ae; Kim, Chi Sik; Cho, Young Jun; Kwon,  
Hyuck Joo; Kim, Bong Ok; Kim, Sung Min; Yoon,  
Seung Soo

INVENTOR(S): Grace Display Inc., S. Korea

PATENT ASSIGNEE(S): Eur. Pat. Appl., 458 pp.

SOURCE: CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

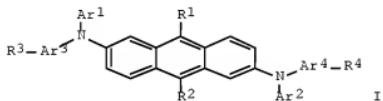
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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EP 2067767	A1	20090610	EP 2008-253858	
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				02
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KR 2009058063	A	20090609	KR 2007-124677	
				200712
				04
KR 940938	B1	20100208		
JP 2009185024	A	20090820	JP 2008-335901	
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US 20090200926	A1	20090813	US 2008-315639	
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CN 101575259	A	20091111	CN 2008-10186338	
				200812
				04
PRIORITY APPLN. INFO.:			KR 2007-124677	A
				200712
				04

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT  
 OTHER SOURCE(S): MARPAT 151:19803  
 GI



AB The title organic electroluminescent compds. are described by the general formula I (R1 and R2 = independently selected H, D, C1-60 alkyl, C2-20 alkenyl, C2-20 alkynyl, C3-15 cycloalkyl, triC1-20 alkylsilyl, di(C1-20 alkyl)(C6-20 aryl)silyl, tri(C6-20 aryl)silyl, C7-15 tricycloalkyl, C4-15 bicycloalkyl, C6-60 aryl, or C3-60 heteroaryl, which may be further substituted by ≥1 of D, C1-60 alkyl, C1-20 alkenyl, C1-20 alkynyl, halo, cyano, Ph, biphenyl, fluorenyl, naphthyl and anthryl; Ar1 and Ar2 = independently selected C6-60 aryl, C3-60 heteroaryl, morpholino, or thimorpholino, and any aryl or heteroaryl groups may be further substituted by ≥1 of D, C1-60 alkyl with or without halo substituents, C1-20 alkoxy, C3-15 cycloalkyl, halo, cyano, tri(C1-20 alkyl)silyl, di(C1-20 alkyl)(C6-20 aryl)silyl, tri(C6-20 aryl)silyl, Ph, biphenyl, fluorenyl, naphthyl, and anthryl; Ar3 and Ar4 = independently selected C6-20 arylene with or without a C1-20 alkyl substituent; and R3 and R4 = independently selected C1-20 alkyl or C6-20 aryl which may be further substituted by D or C1-20 alkyl, with the restriction that the total number of carbons in R3-Ar3- and R4-Ar4- is 21-60). Organic electroluminescent devices employing the compds. as dopants in combination with selected host materials and organic solar cells employing the compds. are also described.

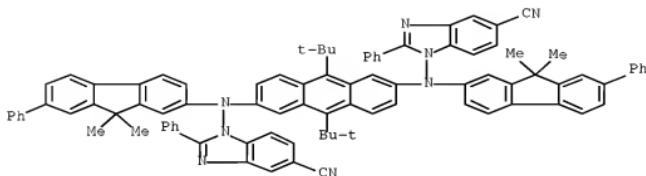
IT 1158992-24-5

RL: MOA (Modifier or additive use); PRPH (Prophetic); TEM (Technical or engineered material use); USES (Uses)

(electroluminescent anthracene diamine derivs. and organic  
electroluminescent devices and solar cells using them)

RN 1158992-24-5 HCPLUS

CN INDEX NAME NOT YET ASSIGNED



IPCI C07C0211-61 [I,A]; C07C0211-00 [I,C\*]; H01L0051-00 [I,A];  
C09K0011-06 [I,A]

IPCR C07C0211-00 [I,C]; C07C0211-61 [I,A]; C09K0011-06 [I,C]; C09K0011-06  
[I,A]; H01L0051-00 [I,C]; H01L0051-00 [I,A]

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related  
Properties)

Section cross-reference(s): 25, 52, 76

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RL: MOA (Modifier or additive use); PRPH (Prophetic); TEM (Technical or engineered material use); USES (Uses)

(electroluminescent anthracene diamine derivs. and organic  
electroluminescent devices and solar cells using them)

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1159023-54-7	1159023-56-9	1159023-57-0	1159023-59-2
1159023-60-5	1159023-62-7	1159023-63-8	1159023-65-0
1159023-66-1	1159023-68-3	1159023-69-4	1159023-71-8
1159023-72-9	1159023-74-1	1159023-75-2	1159023-77-4
1159023-78-5	1159023-80-9	1159023-81-0	1159023-83-2
1159023-84-3	1159023-86-5	1159023-87-6	1159023-89-8
1159023-90-1	1159023-92-3	1159023-93-4	1159023-95-6
1159023-96-7	1159023-98-9	1159023-99-0	1159024-01-7
1159024-02-8	1159024-04-0	1159024-05-1	1159024-07-3
1159024-08-4	1159024-10-8	1159024-11-9	1159024-13-1
1159024-14-2	1159024-16-4	1159024-17-5	1159024-19-7
1159024-20-0	1159024-22-2	1159024-23-3	1159024-25-5
1159024-26-6	1159024-28-8	1159024-29-9	1159024-31-3
1159024-32-4	1159024-34-6	1159024-35-7	1159024-37-9
1159024-38-0	1159024-40-4	1159024-41-5	1159024-43-7
1159024-44-8	1159024-46-0	1159024-47-1	1159024-49-3
1159024-50-6	1159024-52-8	1159024-53-9	1159024-55-1
1159024-56-2	1159024-58-4	1159024-59-5	1159024-61-9
1159024-62-0	1159024-64-2	1159024-65-3	1159024-67-5
1159024-68-6	1159024-70-0	1159024-71-1	1159024-73-3
1159024-74-4	1159024-76-6	1159024-77-7	1159024-79-9
1159024-80-2	1159024-82-4	1159024-83-5	1159024-85-7
1159024-86-8	1159024-88-0	1159024-89-1	

RL: MOA (Modifier or additive use); PRPH (Prophetic); TEM (Technical or engineered material use); USES (Uses)

(electroluminescent anthracene diamine derivs. and organic electroluminescent devices and solar cells using them)

IT	1159024-91-5	1159024-92-6	1159024-94-8	1159024-95-9
	1159024-97-1	1159024-98-2	1159025-00-9	1159025-01-0
	1159025-03-2	1159025-04-3	1159025-06-5	1159025-07-6
	1159025-09-8	1159025-10-1	1159025-12-3	1159025-13-4
	1159025-15-6	1159025-16-7	1159025-18-9	1159025-19-0
	1159025-21-4	1159025-22-5	1159025-24-7	1159025-25-8
	1159025-27-0	1159025-28-1	1159025-30-5	1159025-31-6
	1159025-33-8	1159025-34-9	1159025-36-1	1159025-37-2
	1159025-39-4	1159025-40-7	1159025-42-9	1159025-43-0
	1159025-45-2	1159025-46-3	1159025-48-5	1159025-49-6
	1159025-51-0	1159025-52-1	1159025-54-3	1159025-55-4
	1159025-57-6	1159025-58-7	1159025-60-1	1159025-61-2
	1159025-63-4	1159025-64-5	1159025-66-7	1159025-67-8
	1159025-69-0	1159025-70-3	1159025-72-5	1159025-73-6
	1159025-75-8	1159025-76-9	1159025-78-1	1159025-79-2
	1159025-81-6	1159025-82-7	1159025-84-9	1159025-85-0
	1159025-87-2	1159025-88-3	1159025-90-7	1159025-91-8
	1159025-93-0	1159025-94-1	1159025-96-3	1159025-97-4
	1159025-99-6	1159026-00-2	1159026-02-4	1159026-03-5
	1159026-05-7	1159026-06-8	1159026-08-0	1159026-09-1
	1159026-11-5	1159026-12-6	1159026-14-8	1159026-15-9
	1159026-17-1	1159026-18-2	1159026-20-6	1159026-21-7
	1159026-23-9	1159026-24-0	1159026-26-2	1159026-27-3
	1159026-29-5	1159026-30-8	1159026-32-0	1159026-33-1
	1159026-35-3	1159026-36-4	1159026-38-6	1159026-39-7
	1159026-41-1	1159026-42-2	1159026-44-4	1159026-45-5
	1159026-47-7	1159026-48-8	1159026-50-2	1159026-51-3
	1159026-53-5	1159026-54-6	1159026-56-8	1159026-57-9

1159026-59-1	1159026-60-4	1159026-62-6	1159026-63-7
1159026-65-9	1159026-66-0	1159026-68-2	1159026-70-6
1159026-72-8	1159026-74-0	1159026-76-2	1159026-78-4
1159026-80-8	1159026-82-0	1159026-84-2	1159026-86-4
1159026-88-6	1159026-90-0	1159026-92-2	1159026-94-4
1159026-96-6	1159026-98-8	1159026-99-9	1159027-01-6
1159027-03-8	1159027-05-0	1159027-07-2	1159027-09-4
1159027-11-8	1159027-13-0	1159027-14-1	1159027-16-3
1159027-18-5	1159027-20-9	1159027-23-2	1159027-26-5
1159027-28-7	1159027-30-1	1159027-32-3	1159027-34-5
1159027-36-7	1159027-38-9	1159027-40-3	1159027-42-5
1159027-44-7	1159027-46-9	1159027-48-1	1159027-50-5
1159027-52-7	1159027-54-9	1159027-56-1	1159027-58-3
1159027-60-7	1159027-62-9	1159027-64-1	1159027-65-2
1159027-67-4	1159027-69-6	1159027-71-0	1159027-73-2
1159027-75-4	1159027-77-6	1159027-79-8	1159027-81-2
1159027-83-4	1159027-85-6	1159027-87-8	1159027-89-0
1159027-91-4	1159027-93-6	1159027-95-8	1159027-97-0
1159027-99-2	1159028-01-9	1159028-03-1	1159028-05-3
1159028-07-5	1159028-09-7	1159028-11-1	1159028-13-3
1159028-15-5	1159028-17-7	1159028-19-9	1159028-21-3
1159028-23-5	1159028-25-7	1159028-27-9	1159028-29-1
1159028-31-5	1159028-33-7	1159028-35-9	1159028-37-1
1159028-39-3	1159028-41-7	1159028-43-9	1159028-45-1
1159028-47-3	1159028-49-5	1159028-51-9	1159028-53-1
1159028-55-3	1159028-57-5	1159028-59-7	1159028-61-1
1159028-63-3	1159028-65-5	1159028-67-7	1159028-69-9
1159028-71-3	1159028-73-5	1159028-75-7	1159028-77-9
1159028-79-1	1159028-81-5	1159028-83-7	1159028-85-9
1159028-87-1	1159028-89-3	1159028-91-7	1159028-93-9
1159028-95-1	1159028-97-3	1159028-99-5	

RL: MOA (Modifier or additive use); PRPH (Prophetic); TEM (Technical or engineered material use); USES (Uses)

(electroluminescent anthracene diamine derivs. and organic  
electroluminescent devices and solar cells using them)

IT	1159029-01-2	1159029-03-4	1159029-05-6	1159029-07-8
	1159029-09-0	1159029-11-4	1159029-13-6	1159029-15-8
	1159029-17-0	1159029-19-2	1159029-21-6	1159029-23-8
	1159029-25-0	1159029-27-2	1159029-29-4	1159029-31-8
	1159029-33-0	1159029-35-2	1159029-37-4	1159029-39-6
	1159029-41-0	1159029-43-2	1159029-44-3	1159029-46-5
	1159029-48-7	1159029-50-1	1159029-52-3	1159029-54-5
	1159029-56-7	1159029-58-9	1159029-60-3	1159029-62-5
	1159029-64-7	1159029-66-9	1159029-68-1	1159029-70-5
	1159029-72-7	1159029-74-9	1159029-76-1	1159029-78-3
	1159029-80-7	1159029-82-9	1159029-84-1	1159029-86-3
	1159029-88-5	1159029-92-1	1159029-94-3	1159029-96-5
	1159029-98-7	1159030-00-8	1159030-02-0	1159030-04-2
	1159030-07-5	1159030-10-0	1159030-13-3	1159030-16-6
	1159030-19-9	1159030-22-4	1159030-25-7	1159030-28-0
	1159030-31-5	1159030-34-8	1159030-36-0	1159030-38-2
	1159030-41-7	1159030-44-0	1159030-47-3	1159030-50-8
	1159030-52-0	1159030-55-3	1159030-57-5	1159030-59-7
	1159030-61-1	1159030-63-3	1159030-65-5	1159030-67-7
	1159030-69-9	1159030-71-3	1159030-73-5	1159030-76-8
	1159030-78-0	1159030-80-4	1159030-82-6	1159030-84-8
	1159030-86-0	1159030-88-2	1159030-90-6	1159030-92-8
	1159030-94-0	1159030-97-3	1159030-98-4	1159030-99-5
	1159031-00-1	1159031-01-2	1159031-02-3	1159031-03-4
	1159031-04-5	1159031-05-6	1159031-06-7	1159031-07-8

1159031-08-9	1159031-09-0	1159031-10-3	1159031-11-4
1159031-12-5	1159031-13-6	1159031-14-7	1159031-15-8
1159031-16-9	1159031-17-0	1159031-18-1	1159031-19-2
1159031-20-5	1159031-21-6	1159031-22-7	1159031-23-8
1159031-24-9	1159031-25-0	1159031-26-1	1159031-27-2
1159031-28-3	1159031-29-4	1159031-30-7	1159031-31-8
1159031-32-9	1159031-33-0	1159031-34-1	1159031-35-2
1159031-36-3	1159031-37-4	1159031-38-5	1159031-39-6
1159031-40-9	1159031-42-1	1159031-44-3	1159031-46-5
1159031-48-7	1159031-50-1	1159031-52-3	1159031-54-5
1159031-56-7	1159031-58-9	1159031-60-3	1159031-62-5
1159031-65-8	1159031-69-2	1159031-72-7	1159031-75-0
1159031-77-2	1159031-79-4	1159031-80-7	1159031-82-9
1159031-83-0	1159031-85-2	1159031-86-3	1159031-89-6
1159031-91-0	1159031-92-1	1159031-94-3	1159031-95-4
1159031-97-6	1159031-99-8	1159032-01-5	1159032-02-6
1159032-04-8	1159032-05-9	1159032-07-1	1159032-08-2
1159032-10-6	1159032-11-7	1159032-13-9	1159032-14-0
1159032-15-1	1159032-16-2	1159032-17-3	1159032-18-4
1159032-19-5	1159032-20-8	1159032-21-9	1159032-22-0
1159032-23-1	1159032-24-2	1159032-25-3	1159032-26-4
1159032-27-5	1159032-29-7	1159032-30-0	1159032-31-1
1159032-32-2	1159032-33-3	1159032-34-4	1159032-35-5
1159032-36-6	1159032-37-7	1159032-38-8	1159032-39-9
1159032-40-2	1159032-41-3	1159032-42-4	1159032-43-5
1159032-44-6	1159032-45-7	1159032-46-8	1159032-47-9
1159032-48-0	1159032-49-1	1159032-50-4	1159032-51-5
1159032-52-6	1159032-53-7	1159032-55-9	1159032-56-0
1159032-57-1	1159032-58-2	1159032-59-3	1159032-61-7
1159032-62-8	1159032-63-9	1159032-64-0	1159032-65-1
1159032-66-2	1159032-67-3	1159032-68-4	1159032-69-5
1159032-70-8	1159032-71-9	1159032-72-0	1159032-73-1
1159032-74-2	1159032-75-3	1159032-76-4	1159032-77-5
1159032-78-6	1159032-79-7	1159032-80-0	

RL: MOA (Modifier or additive use); PRPH (Prophetic); TEM (Technical or engineered material use); USES (Uses)

(electroluminescent anthracene diamine derivs. and organic electroluminescent devices and solar cells using them)

IT	1159032-81-1	1159032-82-2	1159032-83-3	1159032-84-4
	1159032-85-5	1159032-86-6	1159032-87-7	1159032-88-8
	1159032-89-9	1159032-91-3	1159032-92-4	1159032-93-5
	1159032-94-6	1159032-95-7	1159032-96-8	1159032-97-9
	1159032-98-0	1159032-99-1	1159033-00-7	1159033-01-8
	1159033-02-9	1159033-03-0	1159033-04-1	1159033-05-2
	1159033-06-3	1159033-07-4	1159033-08-5	1159033-09-6
	1159033-10-9	1159033-11-0	1159033-12-1	1159033-13-2
	1159033-14-3	1159033-15-4	1159033-16-5	1159033-17-6
	1159033-18-7	1159033-19-8	1159033-20-1	1159033-21-2
	1159033-22-3	1159033-23-4	1159033-24-5	1159033-25-6
	1159033-27-8	1159033-28-9	1159033-29-0	1159033-30-3
	1159033-31-4	1159033-32-5	1159033-33-6	1159033-34-7
	1159033-35-8	1159033-36-9	1159033-37-0	1159033-38-1
	1159033-39-2	1159033-40-5	1159033-41-6	1159033-42-7
	1159033-43-8	1159033-44-9	1159033-45-0	1159033-46-1
	1159033-47-2	1159033-48-3	1159033-49-4	1159033-50-7
	1159033-51-8	1159033-52-9	1159033-53-0	1159033-54-1
	1159033-55-2	1159033-56-3	1159033-57-4	1159033-58-5
	1159033-59-6	1159033-60-9	1159033-61-0	1159033-62-1
	1159033-63-2	1159033-64-3	1159033-65-4	1159033-66-5
	1159033-67-6	1159033-68-7	1159033-69-8	1159033-70-1

1159033-71-2	1159033-72-3	1159033-73-4	1159033-74-5
1159033-75-6	1159033-76-7	1159033-77-8	1159033-78-9
1159033-79-0	1159033-80-3	1159033-81-4	1159033-82-5
1159033-83-6	1159033-84-7	1159033-85-8	1159033-86-9
1159033-87-0	1159033-88-1	1159033-89-2	1159033-90-5
1159033-91-6	1159033-92-7	1159033-93-8	1159033-94-9
1159033-95-0	1159033-96-1	1159033-97-2	1159033-98-3
1159033-99-4	1159034-00-0	1159034-01-1	1159034-02-2
1159034-03-3	1159034-04-4	1159034-05-5	1159034-06-6
1159034-07-7	1159034-08-8	1159034-09-9	1159034-10-2
1159034-11-3	1159034-12-4	1159034-13-5	1159034-14-6
1159034-15-7	1159034-16-8	1159034-17-9	1159034-18-0
1159034-19-1	1159034-20-4	1159034-21-5	1159034-22-6
1159034-23-7	1159034-24-8	1159034-25-9	1159034-26-0
1159034-27-1	1159034-28-2	1159034-29-3	1159034-30-6
1159034-31-7	1159034-32-8	1159034-33-9	1159034-34-0
1159034-35-1	1159034-36-2	1159034-37-3	1159034-38-4
1159034-39-5	1159034-40-8	1159034-41-9	1159034-42-0
1159034-43-1	1159034-44-2	1159034-45-3	1159034-46-4
1159034-47-5	1159034-48-6	1159034-49-7	1159034-51-1
1159034-53-3	1159034-54-4	1159034-55-5	1159034-56-6
1159034-57-7	1159034-58-8	1159034-59-9	1159034-60-2
1159034-61-3	1159034-62-4	1159034-63-5	1159034-64-6
1159034-65-7	1159034-66-8	1159034-67-9	1159034-68-0
1159034-69-1	1159034-70-4	1159034-71-5	1159034-72-6
1159034-73-7	1159034-74-8	1159034-75-9	1159034-76-0
1159034-77-1	1159034-78-2	1159034-79-3	1159034-80-6
1159034-81-7	1159034-82-8	1159034-83-9	1159034-84-0
1159034-85-1	1159034-86-2	1159034-87-3	1159034-88-4
1159034-89-5	1159034-90-8	1159034-91-9	1159034-92-0
1159034-93-1	1159034-94-2	1159034-95-3	1159034-96-4
1159034-97-5	1159034-98-6	1159034-99-7	1159035-00-3
1159035-01-4	1159035-02-5	1159035-03-6	1159035-04-7
1159035-05-8	1159035-06-9	1159035-07-0	1159035-08-1
1159035-09-2	1159035-10-5	1159035-11-6	1159035-12-7
1159035-13-8	1159035-14-9	1159035-15-0	1159035-16-1
1159035-17-2	1159035-18-3	1159035-19-4	

RL: MOA (Modifier or additive use); PRPH (Prophetic); TEM (Technical or engineered material use); USES (Uses)

(electroluminescent anthracene diamine derivs. and organic  
electroluminescent devices and solar cells using them)

IT	1159035-20-7	1159035-21-8	1159035-22-9	1159035-23-0
	1159035-24-1	1159035-25-2	1159035-26-3	1159035-27-4
	1159035-28-5	1159035-29-6	1159035-30-9	1159035-31-0
	1159035-32-1	1159035-33-2	1159035-34-3	1159035-35-4
	1159035-36-5	1159035-37-6	1159035-38-7	1159035-39-8
	1159035-40-1	1159035-41-2	1159035-42-3	1159035-43-4
	1159035-44-5	1159035-45-6	1159035-46-7	1159035-47-8
	1159035-48-9	1159035-49-0	1159035-50-3	1159035-51-4
	1159035-52-5	1159035-53-6	1159035-54-7	1159035-55-8
	1159035-56-9	1159035-57-0	1159035-58-1	1159035-59-2
	1159035-62-7	1159035-63-8	1159035-66-1	1159035-67-2
	1159035-70-7	1159035-71-8	1159035-74-1	1159035-75-2
	1159035-78-5	1159035-79-6	1159035-80-9	1159035-81-0
	1159035-82-1	1159035-83-2	1159035-84-3	1159035-85-4
	1159035-86-5	1159035-87-6	1159035-88-7	1159035-89-8
	1159035-90-1	1159035-91-2	1159035-92-3	1159035-93-4
	1159035-94-5	1159035-95-6	1159035-96-7	1159035-97-8
	1159035-98-9	1159035-99-0	1159036-00-6	1159036-01-7
	1159036-02-8	1159036-03-9	1159036-04-0	1159036-05-1

1159036-06-2	1159036-07-3	1159036-08-4	1159036-09-5
1159036-10-8	1159036-11-9	1159036-12-0	1159036-13-1
1159036-14-2	1159036-15-3	1159036-16-4	
1159036-17-5	1159036-18-6	1159036-19-7	1159036-20-0
1159036-21-1	1159036-22-2	1159036-23-3	1159036-24-4
1159036-25-5	1159036-26-6	1159036-27-7	1159036-28-8
1159036-29-9	1159036-30-2	1159036-31-3	1159036-32-4
1159036-33-5	1159036-34-6	1159036-35-7	1159036-36-8
1159036-37-9	1159036-38-0	1159036-39-1	1159036-40-4
1159036-41-5	1159036-42-6	1159036-43-7	1159036-44-8
1159036-45-9	1159036-46-0	1159036-47-1	1159036-48-2
1159036-49-3	1159036-50-6	1159036-51-7	1159036-52-8
1159036-53-9	1159036-54-0	1159036-55-1	1159036-56-2
1159036-57-3	1159036-58-4	1159036-59-5	1159036-60-8
1159036-61-9	1159036-62-0	1159036-63-1	1159036-64-2
1159036-65-3	1159036-66-4	1159036-67-5	1159036-68-6
1159036-69-7	1159036-70-0	1159036-71-1	1159036-72-2
1159036-73-3	1159036-74-4	1159036-75-5	1159036-76-6
1159036-77-7	1159036-78-8	1159036-79-9	1159036-80-2
1159036-81-3	1159036-82-4	1159036-83-5	1159036-84-6
1159036-85-7	1159036-86-8	1159036-87-9	1159036-88-0
1159036-89-1	1159036-90-4	1159036-91-5	1159036-92-6
1159036-93-7	1159036-94-8	1159036-95-9	1159036-96-0
1159036-97-1	1159036-98-2	1159036-99-3	1159037-00-9
1159037-01-0	1159037-02-1	1159037-03-2	1159037-04-3
1159037-05-4	1159037-06-5	1159037-07-6	1159037-08-7
1159037-09-8	1159037-10-1	1159037-11-2	1159037-12-3
1159037-13-4	1159037-14-5	1159037-15-6	1159037-16-7
1159037-17-8	1159037-18-9	1159037-19-0	1159037-20-3
1159037-21-4	1159037-22-5	1159037-23-6	1159037-24-7
1159037-25-8	1159037-26-9	1159037-27-0	1159037-28-1
1159037-29-2	1159037-30-5	1159037-31-6	1159037-32-7
1159037-33-8	1159037-34-9	1159037-35-0	1159037-36-1
1159037-37-2	1159037-38-3	1159037-39-4	
1159037-40-7	1159037-41-8	1159037-42-9	1159037-43-0
1159037-44-1	1159037-45-2	1159037-46-3	1159037-47-4
1159037-48-5	1159037-49-6	1159037-50-9	1159037-51-0
1159037-52-1	1159037-53-2	1159037-54-3	1159037-55-4
1159037-56-5	1159037-57-6	1159037-58-7	1159037-59-8
1159037-60-1	1159037-61-2	1159037-62-3	1159037-63-4
1159037-64-5			

RL: MOA (Modifier or additive use); PRPH (Prophetic); TEM (Technical or engineered material use); USES (Uses)

(electroluminescent anthracene diamine derivs. and organic electroluminescent devices and solar cells using them)

IT	1159037-65-6	1159037-66-7	1159037-67-8	1159037-68-9
	1159037-69-0	1159037-70-3	1159037-71-4	1159037-72-5
	1159037-73-6	1159037-74-7	1159037-75-8	1159037-76-9
	1159037-77-0	1159037-78-1	1159037-79-2	1159037-80-5
	1159037-81-6	1159037-82-7	1159037-83-8	1159037-84-9
	1159037-85-0	1159037-86-1	1159037-87-2	1159037-88-3
	1159037-89-4	1159037-90-7	1159037-91-8	1159037-92-9
	1159037-93-0	1159037-94-1	1159037-95-2	1159037-96-3
	1159037-97-4	1159037-98-5	1159037-99-6	
	1159038-00-2	1159038-01-3	1159038-02-4	1159038-03-5
	1159038-04-6	1159038-05-7	1159038-06-8	1159038-07-9
	1159038-08-0	1159038-09-1	1159038-10-4	1159038-12-6
	1159038-13-7	1159038-14-8	1159038-15-9	1159038-16-0
	1159038-17-1	1159038-18-2	1159038-19-3	1159038-21-7
	1159038-22-8	1159038-24-0	1159038-25-1	1159038-27-3

1159038-28-4	1159038-30-8	1159038-31-9	1159038-32-0
1159038-33-1	1159038-35-3	1159038-36-4	1159038-37-5
1159038-38-6	1159038-39-7	1159038-40-0	1159038-41-1
1159038-42-2	1159038-44-4	1159038-45-5	1159038-46-6
1159038-47-7	1159038-49-9	1159038-50-2	1159038-53-5
1159038-54-6	1159038-56-8	1159038-57-9	1159038-59-1
1159038-60-4	1159038-61-5	1159038-62-6	1159038-63-7
1159038-64-8	1159038-65-9	1159038-66-0	1159038-67-1
1159038-68-2	1159038-69-3	1159038-70-6	1159038-71-7
1159038-72-8	1159038-73-9	1159038-74-0	1159038-75-1
1159038-76-2	1159038-77-3	1159038-78-4	1159038-79-5
1159038-80-8	1159038-81-9	1159038-82-0	1159038-83-1
1159038-84-2	1159038-85-3	1159038-86-4	1159038-87-5
1159038-88-6	1159038-89-7	1159038-90-0	1159038-91-1
1159038-92-2	1159038-93-3	1159038-94-4	1159038-95-5
1159038-96-6	1159038-97-7	1159038-98-8	1159038-99-9
1159039-00-5	1159039-01-6	1159039-02-7	1159039-03-8
1159039-04-9	1159039-05-0	1159039-06-1	1159039-07-2
1159039-08-3	1159039-09-4	1159039-10-7	1159039-11-8
1159039-12-9	1159039-13-0	1159039-14-1	1159039-15-2
1159039-16-3	1159039-17-4	1159039-18-5	1159039-19-6
1159039-20-9	1159039-21-0	1159039-22-1	1159039-23-2
1159039-24-3	1159039-25-4	1159039-26-5	1159039-27-6
1159039-28-7	1159039-29-8	1159039-30-1	1159039-31-2
1159039-32-3	1159039-33-4	1159039-34-5	1159039-35-6
1159039-36-7	1159039-37-8	1159039-38-9	1159039-39-0
1159039-40-3	1159039-41-4	1159039-42-5	1159039-43-6
1159039-44-7	1159039-45-8	1159039-46-9	1159039-47-0
1159039-48-1	1159039-49-2	1159039-50-5	1159039-51-6
1159039-52-7	1159039-53-8	1159039-54-9	1159039-55-0
1159039-56-1	1159039-57-2	1159039-58-3	1159039-59-4
1159039-60-7	1159039-61-8	1159039-62-9	1159039-63-0
1159039-64-1	1159039-65-2	1159039-66-3	1159039-67-4
1159039-68-5	1159039-69-6	1159039-70-9	1159039-71-0
1159039-72-1	1159039-73-2	1159039-74-3	1159039-75-4
1159039-76-5	1159039-77-6	1159039-78-7	1159039-79-8
1159039-80-1	1159039-81-2	1159039-82-3	1159039-83-4
1159039-84-5	1159039-85-6	1159039-86-7	1159039-87-8
1159039-88-9	1159039-89-0	1159039-90-3	1159039-91-4
1159039-92-5	1159039-93-6	1159039-94-7	
1159039-95-8	1159039-96-9	1159039-97-0	1159039-98-1
1159039-99-2	1159040-00-2	1159040-01-3	1159040-02-4
1159040-03-5	1159040-04-6	1159040-05-7	1159040-06-8
1159040-07-9	1159040-08-0	1159040-09-1	1159040-10-4
1159040-11-5			

RL: MOA (Modifier or additive use); PRPH (Prophetic); TEM (Technical or engineered material use); USES (Uses)

(electroluminescent anthracene diamine derivs. and organic  
electroluminescent devices and solar cells using them)

IT	1159040-12-6	1159040-13-7	1159040-14-8	1159040-15-9
	1159040-16-0	1159040-17-1	1159040-18-2	1159040-19-3
	1159040-20-6	1159040-21-7	1159040-22-8	1159040-23-9
	1159040-24-0	1159040-25-1	1159040-26-2	1159040-27-3
	1159040-28-4	1159040-29-5	1159040-30-8	1159040-31-9
	1159040-32-0	1159040-33-1	1159040-34-2	1159040-35-3
	1159040-36-4	1159040-37-5	1159040-38-6	1159040-39-7
	1159040-40-0	1159040-41-1	1159040-42-2	1159040-43-3
	1159040-44-4	1159040-45-5	1159040-46-6	1159040-47-7
	1159040-48-8	1159040-49-9	1159040-50-2	1159040-51-3
	1159040-52-4	1159040-53-5	1159040-54-6	1159040-55-7

1159040-56-8	1159040-57-9	1159040-58-0	1159040-59-1
1159040-60-4	1159040-61-5	1159040-64-8	1159040-65-9
1159040-66-0	1159040-67-1	1159040-68-2	1159040-69-3
1159040-70-6	1159040-71-7	1159040-72-8	1159040-73-9
1159040-74-0	1159040-75-1	1159040-76-2	1159040-77-3
1159040-78-4	1159040-79-5	1159040-81-9	1159040-82-0
1159040-83-1	1159040-84-2	1159040-85-3	1159040-86-4
1159040-87-5	1159040-88-6	1159040-89-7	1159040-90-0
1159040-91-1	1159040-92-2	1159040-93-3	1159040-94-4
1159040-95-5	1159040-96-6	1159040-97-7	1159040-98-8
1159040-99-9	1159041-00-5	1159041-01-6	1159041-02-7
1159041-03-8	1159041-04-9	1159041-05-0	1159041-06-1
1159041-07-2	1159041-08-3	1159041-09-4	1159041-10-7
1159041-11-8	1159041-12-9	1159041-13-0	1159041-14-1
1159041-15-2	1159041-16-3	1159041-17-4	1159041-18-5
1159041-19-6	1159041-20-9	1159041-21-0	1159041-22-1
1159041-23-2	1159041-24-3	1159041-25-4	1159041-26-5
1159041-27-6	1159041-28-7	1159041-29-8	1159041-30-1
1159041-31-2	1159041-32-3	1159041-33-4	1159041-34-5
1159041-35-6	1159041-36-7	1159041-37-8	1159041-38-9
1159041-39-0	1159041-40-3	1159041-41-4	1159041-42-5
1159041-43-6	1159041-44-7	1159041-45-8	1159041-46-9
1159041-47-0	1159041-48-1	1159041-49-2	1159041-50-5
1159041-51-6	1159041-52-7	1159041-53-8	1159041-54-9
1159041-55-0	1159041-56-1	1159041-57-2	1159041-58-3
1159041-59-4	1159041-60-7	1159041-61-8	1159041-62-9
1159041-63-0	1159041-64-1	1159041-65-2	1159041-66-3
1159041-67-4	1159041-68-5	1159041-69-6	1159041-70-9
1159041-71-0	1159041-72-1	1159041-73-2	1159041-74-3
1159041-75-4	1159041-76-5	1159041-77-6	1159041-78-7
1159041-79-8	1159041-80-1	1159041-81-2	1159041-82-3
1159041-83-4	1159041-84-5	1159041-85-6	1159041-86-7
1159041-87-8	1159041-88-9	1159041-89-0	1159041-90-3
1159041-91-4	1159041-92-5	1159041-93-6	1159041-94-7
1159041-95-8	1159041-96-9	1159041-97-0	1159041-98-1
1159041-99-2	1159042-00-8	1159042-01-9	1159042-02-0
1159042-03-1	1159042-04-2	1159042-05-3	1159042-06-4
1159042-07-5	1159042-08-6	1159042-09-7	1159042-10-0
1159042-11-1	1159042-12-2	1159042-13-3	1159042-14-4
1159042-15-5	1159042-16-6	1159042-17-7	1159042-18-8
1159042-19-9	1159042-20-2	1159042-21-3	1159042-22-4
1159042-23-5	1159042-24-6	1159042-25-7	1159042-26-8
1159042-27-9	1159042-28-0	1159042-29-1	1159042-30-4
1159042-31-5	1159042-32-6	1159042-33-7	1159042-34-8
1159042-35-9	1159042-36-0	1159042-37-1	1159042-38-2
1159042-39-3	1159042-40-6	1159042-41-7	1159042-42-8
1159042-43-9	1159042-44-0	1159042-45-1	1159042-46-2
1159042-47-3	1159042-48-4	1159042-49-5	

RL: MOA (Modifier or additive use); PRPH (Prophetic); TEM (Technical or engineered material use); USES (Uses)

(electroluminescent anthracene diamine derivs. and organic electroluminescent devices and solar cells using them)

IT	1159042-50-8	1159042-51-9	1159042-52-0	1159042-53-1
	1159042-54-2	1159042-55-3	1159042-56-4	1159042-57-5
	1159042-58-6	1159042-59-7	1159042-60-0	1159042-61-1
	1159042-62-2	1159042-63-3	1159042-64-4	1159042-65-5
	1159042-66-6	1159042-67-7	1159042-68-8	1159042-69-9
	1159042-70-2	1159042-71-3	1159042-72-4	1159042-73-5
	1159042-74-6	1159042-75-7	1159042-76-8	1159042-77-9
	1159042-78-0	1159042-79-1	1159042-80-4	1159042-81-5

1159042-82-6	1159042-83-7	1159042-84-8	1159042-85-9
1159042-86-0	1159042-87-1	1159042-88-2	1159042-89-3
1159042-90-6	1159042-91-7	1159042-92-8	1159042-93-9
1159042-94-0	1159042-95-1	1159042-96-2	1159042-97-3
1159042-98-4	1159042-99-5	1159043-00-1	1159043-01-2
1159043-02-3	1159043-03-4	1159043-04-5	1159043-05-6
1159043-06-7	1159043-07-8	1159043-08-9	1159043-09-0
1159043-10-3	1159043-11-4	1159043-12-5	1159043-13-6
1159043-14-7	1159043-15-8	1159043-16-9	1159043-17-0
1159043-18-1	1159043-19-2	1159043-20-5	1159043-21-6
1159043-22-7	1159043-23-8	1159043-24-9	1159043-25-0
1159043-26-1	1159043-27-2	1159043-28-3	1159043-29-4
1159043-30-7	1159043-31-8	1159043-32-9	1159043-33-0
1159043-34-1	1159043-35-2	1159043-36-3	1159043-37-4
1159043-38-5	1159043-39-6	1159043-40-9	1159043-41-0
1159043-42-1	1159043-43-2	1159043-44-3	1159043-45-4
1159043-46-5	1159043-47-6	1159043-48-7	1159043-49-8
1159043-50-1	1159043-51-2	1159043-52-3	1159043-53-4
1159043-54-5	1159043-56-7	1159043-57-8	1159043-58-9
1159043-59-0	1159043-60-3	1159043-61-4	1159043-62-5
1159043-63-6	1159043-64-7	1159043-65-8	1159043-66-9
1159043-67-0	1159043-68-1	1159043-69-2	1159043-70-5
1159043-71-6	1159043-72-7	1159043-73-8	1159043-74-9
1159043-75-0	1159043-76-1	1159043-77-2	1159043-78-3
1159043-79-4	1159043-80-7	1159043-81-8	1159043-83-0
1159043-84-1	1159043-85-2	1159043-87-4	1159043-88-5
1159043-89-6	1159043-90-9	1159043-91-0	1159043-92-1
1159043-93-2	1159043-94-3	1159043-95-4	1159043-96-5
1159043-97-6	1159043-98-7	1159043-99-8	1159044-00-4
1159044-01-5	1159044-02-6	1159044-03-7	1159044-04-8
1159044-05-9	1159044-07-1	1159044-08-2	1159044-09-3
1159044-10-6	1159044-11-7	1159044-12-8	1159044-13-9
1159044-14-0	1159044-15-1	1159044-16-2	1159044-17-3
1159044-18-4	1159044-19-5	1159044-20-8	1159044-21-9
1159044-22-0	1159044-23-1	1159044-24-2	1159044-25-3
1159044-26-4	1159044-27-5	1159044-28-6	1159044-29-7
1159044-30-0	1159044-32-2	1159044-33-3	1159044-34-4
1159044-35-5	1159044-36-6	1159044-37-7	1159044-38-8
1159044-39-9	1159044-40-2	1159044-41-3	1159044-42-4
1159044-43-5	1159044-44-6	1159044-45-7	1159044-46-8
1159044-47-9	1159044-48-0	1159044-49-1	1159044-50-4
1159044-51-5	1159044-52-6	1159044-53-7	1159044-54-8
1159044-55-9	1159044-56-0	1159044-57-1	1159044-58-2
1159044-59-3	1159044-60-6	1159044-61-7	1159044-62-8
1159044-63-9	1159044-64-0	1159044-65-1	1159044-66-2
1159044-67-3	1159044-68-4	1159044-70-8	1159044-71-9
1159044-72-0	1159044-73-1	1159044-74-2	1159044-75-3
1159044-76-4	1159044-77-5	1159044-78-6	1159044-79-7
1159044-80-0	1159044-81-1	1159044-82-2	1159044-83-3
1159044-84-4	1159044-85-5	1159044-86-6	1159044-87-7
1159044-88-8	1159044-89-9	1159044-90-2	

RL: MOA (Modifier or additive use); PRPH (Prophetic); TEM (Technical or engineered material use); USES (Uses)

(electroluminescent anthracene diamine derivs. and organic electroluminescent devices and solar cells using them)

IT	1159044-91-3	1159044-92-4	1159044-93-5	1159044-94-6
	1159044-96-8	1159044-97-9	1159044-98-0	1159044-99-1
	1159045-00-7	1159045-01-8	1159045-02-9	1159045-03-0
	1159045-04-1	1159045-05-2	1159045-06-3	1159045-07-4
	1159045-08-5	1159045-09-6	1159045-10-9	1159045-11-0

1159045-12-1	1159045-13-2	1159045-14-3	1159045-15-4
1159045-16-5	1159045-17-6	1159045-19-8	1159045-20-1
1159045-21-2	1159045-22-3	1159045-23-4	1159045-24-5
1159045-25-6	1159045-26-7	1159045-27-8	1159045-28-9
1159045-29-0	1159045-30-3	1159045-31-4	1159045-32-5
1159045-33-6	1159045-34-7	1159045-35-8	1159045-36-9
1159045-37-0	1159045-38-1	1159045-39-2	1159045-41-6
1159045-42-7	1159045-43-8	1159045-44-9	1159045-45-0
1159045-46-1	1159045-47-2	1159045-48-3	1159045-49-4
1159045-50-7	1159045-51-8	1159045-52-9	1159045-53-0
1159045-54-1	1159045-55-2	1159045-56-3	1159045-58-5
1159045-59-6	1159045-60-9	1159045-61-0	1159045-62-1
1159045-63-2	1159045-64-3	1159045-65-4	1159045-67-6
1159045-69-8	1159045-71-2	1159045-73-4	1159045-75-6
1159045-78-9	1159045-79-0	1159045-80-3	1159045-81-4
1159045-82-5	1159045-83-6	1159045-84-7	1159045-85-8
1159045-86-9	1159045-87-0	1159045-88-1	1159045-89-2
1159045-90-5	1159045-91-6	1159045-92-7	1159045-94-9
1159045-95-0	1159045-96-1	1159045-97-2	1159045-98-3
1159045-99-4	1159046-00-0	1159046-01-1	1159046-02-2
1159046-03-3	1159046-04-4	1159046-05-5	1159046-06-6
1159046-07-7	1159046-08-8	1159046-09-9	1159046-10-2
1159046-11-3	1159046-12-4	1159046-13-5	1159046-14-6
1159046-16-8	1159046-17-9	1159046-18-0	1159046-19-1
1159046-20-4	1159046-21-5	1159046-22-6	1159046-23-7
1159046-24-8	1159046-25-9	1159046-26-0	1159046-27-1
1159046-28-2	1159046-29-3	1159046-30-6	1159046-32-8
1159046-33-9	1159046-34-0	1159046-35-1	1159046-36-2
1159046-37-3	1159046-38-4	1159046-39-5	1159046-40-8
1159046-41-9	1159046-42-0	1159046-43-1	1159046-44-2
1159046-45-3	1159046-46-4	1159046-47-5	1159046-49-7
1159046-50-0	1159046-51-1	1159046-52-2	1159046-54-4
1159046-55-5	1159046-56-6	1159046-57-7	1159046-58-8
1159046-59-9	1159046-60-2	1159046-61-3	1159046-62-4
1159046-63-5	1159046-64-6	1159046-65-7	1159046-66-8
1159046-67-9	1159046-68-0	1159046-69-1	1159046-70-4
1159046-71-5	1159046-72-6	1159046-73-7	1159046-74-8
1159046-75-9	1159046-76-0	1159046-77-1	1159046-78-2
1159046-79-3	1159046-80-6	1159046-81-7	1159046-82-8
1159046-83-9	1159046-84-0	1159046-85-1	1159046-86-2
1159046-87-3	1159046-88-4	1159046-89-5	1159046-90-8
1159046-91-9	1159046-92-0	1159046-93-1	1159046-94-2
1159046-95-3	1159046-96-4	1159046-97-5	1159046-98-6
1159046-99-7	1159047-00-3	1159047-01-4	1159047-02-5
1159047-03-6	1159047-04-7	1159047-05-8	1159047-06-9
1159047-07-0	1159047-08-1	1159047-09-2	1159047-10-5
1159047-11-6	1159047-12-7	1159047-13-8	1159047-14-9
1159047-15-0	1159047-16-1	1159047-17-2	1159047-18-3
1159047-19-4	1159047-20-7	1159047-21-8	1159047-22-9
1159047-23-0	1159047-24-1	1159047-25-2	1159047-26-3
1159047-27-4	1159047-28-5	1159047-29-6	1159047-30-9
1159047-31-0	1159047-32-1	1159047-33-2	1159047-34-3
1159047-35-4	1159047-36-5	1159047-37-6	1159047-38-7
1159047-39-8	1159047-40-1	1159047-41-2	

RL: MOA (Modifier or additive use); PRPH (Prophetic); TEM (Technical or engineered material use); USES (Uses)

(electroluminescent anthracene diamine derivs. and organic  
electroluminescent devices and solar cells using them)

IT	1159047-42-3	1159047-43-4	1159047-44-5	1159047-45-6
	1159047-46-7	1159047-47-8	1159047-48-9	1159047-49-0

1159047-50-3	1159047-51-4	1159047-52-5	1159047-53-6
1159047-54-7	1159047-55-8	1159047-56-9	1159047-57-0
1159047-58-1	1159047-59-2	1159047-60-5	1159047-61-6
1159047-62-7	1159047-63-8	1159047-64-9	1159047-65-0
1159047-66-1	1159047-67-2	1159047-68-3	1159047-69-4
1159047-70-7	1159047-71-8	1159047-72-9	1159047-73-0
1159047-74-1	1159047-75-2	1159047-76-3	1159047-77-4
1159047-78-5	1159047-79-6	1159047-81-0	1159047-82-1
1159047-83-2	1159047-84-3	1159047-85-4	1159047-86-5
1159047-87-6	1159047-88-7	1159047-89-8	1159047-90-1
1159047-91-2	1159047-92-3	1159047-93-4	1159047-94-5
1159047-95-6	1159047-96-7	1159047-97-8	1159047-98-9
1159047-99-0	1159048-00-6	1159048-02-8	1159048-03-9
1159048-04-0	1159048-05-1	1159048-06-2	1159048-07-3
1159048-08-4	1159048-09-5	1159048-10-8	1159048-11-9
1159048-12-0	1159048-13-1	1159048-14-2	1159048-15-3
1159048-16-4	1159048-17-5	1159048-18-6	1159048-19-7
1159048-21-1	1159048-22-2	1159048-23-3	1159048-24-4
1159048-25-5	1159048-26-6	1159048-27-7	1159048-28-8
1159048-29-9	1159048-30-2	1159048-31-3	1159048-32-4
1159048-33-5	1159048-34-6	1159048-35-7	1159048-36-8
1159048-37-9	1159048-38-0	1159048-39-1	1159048-40-4
1159048-41-5	1159048-42-6	1159048-44-8	1159048-45-9
1159048-46-0	1159048-47-1	1159048-48-2	1159048-49-3
1159048-50-6	1159048-51-7	1159048-52-8	1159048-53-9
1159048-54-0	1159048-55-1	1159048-56-2	1159048-57-3
1159048-58-4	1159048-59-5	1159048-60-8	1159048-61-9
1159048-62-0	1159048-63-1	1159048-64-2	1159048-65-3
1159048-66-4	1159048-67-5	1159048-68-6	1159048-69-7
1159048-70-0	1159048-71-1	1159048-72-2	1159048-73-3
1159048-74-4	1159048-75-5	1159048-76-6	1159048-77-7
1159048-78-8	1159048-79-9	1159048-80-2	1159048-81-3
1159048-82-4	1159048-83-5	1159048-84-6	1159048-85-7
1159048-86-8	1159048-87-9	1159048-88-0	1159048-89-1
1159048-90-4	1159048-91-5	1159048-92-6	1159048-93-7
1159048-95-9	1159048-96-0	1159048-97-1	1159048-98-2
1159048-99-3	1159049-00-9	1159049-01-0	1159049-02-1
1159049-03-2	1159049-04-3	1159049-05-4	1159049-06-5
1159049-07-6	1159049-08-7	1159049-09-8	1159049-10-1
1159049-11-2	1159049-12-3	1159049-13-4	1159049-14-5
1159049-16-7	1159049-17-8	1159049-18-9	1159049-19-0
1159049-20-3	1159049-21-4	1159049-22-5	1159049-23-6
1159049-24-7	1159049-25-8	1159049-26-9	1159049-27-0
1159049-28-1	1159049-29-2	1159049-30-5	1159049-31-6
1159049-32-7	1159049-33-8	1159049-34-9	1159049-35-0
1159049-36-1	1159049-37-2	1159049-38-3	1159049-39-4
1159049-40-7	1159049-41-8	1159049-42-9	1159049-43-0
1159049-44-1	1159049-45-2	1159049-46-3	1159049-47-4
1159049-48-5	1159049-49-6	1159049-50-9	1159049-51-0
1159049-52-1	1159049-53-2	1159049-54-3	1159049-55-4
1159049-56-5	1159049-57-6	1159049-58-7	1159049-60-1
1159049-61-2	1159049-62-3	1159049-63-4	1159049-64-5
1159049-65-6	1159049-66-7	1159049-67-8	1159049-68-9
1159049-69-0	1159049-70-3	1159049-71-4	1159049-72-5
1159049-73-6	1159049-74-7	1159049-75-8	1159049-76-9
1159049-77-0	1159049-78-1	1159049-79-2	1159049-80-5
1159049-81-6	1159049-82-7	1159049-83-8	

RL: MOA (Modifier or additive use); PRPH (Prophetic); TEM (Technical or engineered material use); USES (Uses)

(electroluminescent anthracene diamine derivs. and organic

electroluminescent devices and solar cells using them)					
IT	1159049-84-9	1159049-85-0	1159049-86-1	1159049-87-2	
	1159049-88-3	1159049-89-4	1159049-90-7	1159049-91-8	
	1159049-92-9	1159049-93-0	1159049-94-1	1159049-95-2	
	1159049-96-3	1159049-97-4	1159049-98-5	1159049-99-6	
	1159050-00-6	1159050-01-7	1159050-02-8	1159050-03-9	
	1159050-04-0	1159050-05-1	1159050-06-2	1159050-07-3	
	1159050-08-4	1159050-09-5	1159050-10-8	1159050-11-9	
	1159050-12-0	1159050-13-1	1159050-14-2	1159050-15-3	
	1159050-16-4	1159050-18-6	1159050-19-7	1159050-20-0	
	1159050-21-1	1159050-22-2	1159050-23-3	1159050-24-4	
	1159050-25-5	1159050-26-6	1159050-27-7	1159050-28-8	
	1159050-29-9	1159050-30-2	1159050-31-3	1159050-32-4	
	1159050-33-5	1159050-34-6	1159050-35-7	1159050-36-8	
	1159050-37-9	1159050-38-0	1159050-39-1	1159050-40-4	
	1159050-41-5	1159050-42-6	1159050-43-7	1159050-45-9	
	1159050-46-0	1159050-48-2	1159050-49-3	1159050-50-6	
	1159050-51-7	1159050-52-8	1159050-53-9	1159050-54-0	
	1159050-55-1	1159050-56-2	1159050-57-3	1159050-58-4	
	1159050-59-5	1159050-60-8	1159050-61-9	1159050-62-0	
	1159050-63-1	1159050-64-2	1159050-65-3	1159050-66-4	
	1159050-67-5	1159050-68-6	1159050-69-7	1159050-70-0	
	1159050-71-1	1159050-72-2	1159050-73-3	1159050-74-4	
	1159050-75-5	1159050-76-6	1159050-77-7	1159050-78-8	
	1159050-79-9	1159050-80-2	1159050-81-3	1159050-82-4	
	1159050-83-5	1159050-84-6	1159050-85-7	1159050-86-8	
	1159050-87-9	1159050-88-0	1159050-89-1	1159050-90-4	
	1159050-91-5	1159050-92-6	1159050-93-7	1159050-94-8	
	1159050-95-9	1159050-96-0	1159050-97-1	1159050-98-2	
	1159050-99-3	1159051-00-9	1159051-01-0	1159051-02-1	
	1159051-03-2	1159051-04-3	1159051-05-4	1159051-06-5	
	1159051-07-6	1159051-08-7	1159051-09-8	1159051-10-1	
	1159051-11-2	1159051-12-3	1159051-13-4	1159051-15-6	
	1159051-16-7	1159051-17-8	1159051-18-9	1159051-19-0	
	1159051-20-3	1159051-21-4	1159051-22-5	1159051-23-6	
	1159051-24-7	1159051-25-8	1159051-26-9	1159051-27-0	
	1159051-28-1	1159051-29-2	1159051-30-5	1159051-31-6	
	1159051-32-7	1159051-33-8	1159051-34-9	1159051-35-0	
	1159051-36-1	1159051-37-2	1159051-38-3	1159051-39-4	
	1159051-40-7	1159051-41-8	1159051-42-9	1159051-43-0	
	1159051-44-1	1159051-45-2	1159051-46-3	1159051-47-4	
	1159051-48-5	1159051-49-6	1159051-50-9	1159051-51-0	
	1159051-52-1	1159051-53-2	1159051-54-3	1159051-55-4	
	1159051-56-5	1159051-57-6	1159051-58-7	1159051-59-8	
	1159051-60-1	1159051-61-2	1159051-62-3	1159051-63-4	
	1159051-64-5	1159051-65-6	1159051-66-7	1159051-67-8	
	1159051-68-9	1159051-69-0	1159051-70-3	1159051-71-4	
	1159051-72-5	1159051-73-6	1159051-74-7	1159051-75-8	
	1159051-76-9	1159051-77-0	1159051-78-1	1159051-79-2	
	1159051-80-5	1159051-81-6	1159051-82-7	1159051-83-8	
	1159051-84-9	1159051-85-0	1159051-86-1	1159051-87-2	
	1159051-88-3	1159051-89-4	1159051-90-7	1159051-91-8	
	1159051-92-9	1159051-93-0	1159051-94-1	1159051-95-2	
	1159051-96-3	1159051-97-4	1159051-98-5	1159051-99-6	
	1159052-00-2	1159052-01-3	1159052-02-4	1159052-03-5	
	1159052-04-6	1159052-05-7	1159052-06-8	1159052-07-9	
	1159052-08-0	1159052-09-1	1159052-10-4	1159052-11-5	
	1159052-12-6	1159052-13-7	1159052-14-8	1159052-15-9	
	1159052-16-0	1159052-17-1	1159052-18-2	1159052-19-3	
	1159052-20-6	1159052-21-7	1159052-22-8		

RL: MOA (Modifier or additive use); PRPH (Prophetic); TEM (Technical or engineering material use); USES (Uses)

(electroluminescent anthracene diamine derivs. and organic electroluminescent devices and solar cells using them)

IT	1159052-23-9	1159052-24-0	1159052-25-1	1159052-26-2
	1159052-27-3	1159052-28-4	1159052-29-5	1159052-30-8
	1159052-31-9	1159052-32-0	1159052-33-1	1159052-34-2
	1159052-35-3	1159052-36-4	1159052-37-5	1159052-38-6
	1159052-39-7	1159052-40-0	1159052-41-1	1159052-42-2
	1159052-43-3	1159052-44-4	1159052-45-5	1159052-46-6
	1159052-47-7	1159052-48-8	1159052-49-9	1159052-50-2
	1159052-51-3	1159052-52-4	1159052-53-5	1159052-54-6
	1159052-55-7	1159052-56-8	1159052-57-9	1159052-58-0
	1159052-59-1	1159052-60-4	1159052-61-5	1159052-62-6
	1159052-63-7	1159052-64-8	1159052-65-9	1159052-66-0
	1159052-67-1	1159052-68-2	1159052-69-3	1159052-70-6
	1159052-71-7	1159052-72-8	1159052-73-9	1159052-74-0
	1159052-75-1	1159052-76-2	1159052-77-3	1159052-78-4
	1159052-79-5	1159052-80-8	1159052-81-9	1159052-82-0
	1159052-83-1	1159052-84-2	1159052-85-3	1159052-86-4
	1159052-87-5	1159052-88-6	1159052-89-7	1159052-90-0
	1159052-91-1	1159052-92-2	1159052-93-3	1159052-94-4
	1159052-95-5	1159052-96-6	1159052-97-7	1159052-98-8
	1159052-99-9	1159053-00-5	1159053-01-6	1159053-02-7
	1159053-03-8	1159053-04-9	1159053-05-0	1159053-06-1
	1159053-07-2	1159053-08-3	1159053-09-4	1159053-10-7
	1159053-11-8	1159053-12-9	1159053-13-0	1159053-14-1
	1159053-15-2	1159053-16-3	1159053-17-4	1159053-18-5
	1159053-19-6	1159053-20-9	1159053-21-0	1159053-22-1
	1159053-23-2	1159053-24-3	1159053-25-4	1159053-26-5
	1159053-27-6	1159053-28-7	1159053-29-8	1159053-30-1
	1159053-31-2	1159053-32-3	1159053-33-4	1159053-34-5
	1159053-35-6	1159053-36-7	1159053-37-8	1159053-38-9
	1159053-39-0	1159053-40-3	1159053-41-4	1159053-42-5
	1159053-43-6	1159053-44-7	1159053-45-8	1159053-46-9
	1159053-47-0	1159053-48-1	1159053-49-2	1159053-50-5
	1159053-51-6	1159053-52-7	1159053-53-8	1159053-54-9
	1159053-55-0	1159053-56-1	1159053-57-2	1159053-58-3
	1159053-59-4	1159053-60-7	1159053-61-8	1159053-62-9
	1159053-63-0	1159053-64-1	1159053-65-2	1159053-66-3
	1159053-67-4	1159053-68-5	1159053-69-6	1159053-70-9
	1159053-71-0	1159053-72-1	1159053-73-2	1159053-74-3
	1159053-75-4	1159053-76-5	1159053-77-6	1159053-78-7
	1159053-79-8	1159053-80-1	1159053-81-2	1159053-82-3
	1159053-83-4	1159053-84-5	1159053-85-6	1159053-86-7
	1159053-87-8	1159053-88-9	1159053-89-0	1159053-90-3
	1159053-91-4	1159053-92-5	1159053-93-6	1159053-94-7
	1159053-95-8	1159053-96-9	1159053-97-0	1159053-98-1
	1159053-99-2	1159054-00-8	1159054-01-9	1159054-02-0
	1159054-03-1	1159054-04-2	1159054-05-3	1159054-06-4
	1159054-07-5	1159054-08-6	1159054-09-7	1159054-10-0
	1159054-11-1	1159054-12-2	1159054-13-3	1159054-14-4
	1159054-15-5	1159054-16-6	1159054-17-7	1159054-18-8
	1159054-19-9	1159054-20-2	1159054-21-3	1159054-22-4
	1159054-23-5	1159054-24-6	1159054-25-7	1159054-26-8
	1159054-27-9	1159054-28-0	1159054-29-1	1159054-30-4
	1159054-31-5	1159054-32-6	1159054-33-7	1159054-34-8
	1159054-35-9	1159054-36-0	1159054-37-1	1159054-38-2
	1159054-39-3	1159054-40-6	1159054-41-7	1159054-42-8
	1159054-43-9	1159054-44-0	1159054-45-1	1159054-46-2

1159054-47-3 1159054-48-4 1159054-49-5 1159054-50-8

1159054-51-9 1159054-52-0 1159054-53-1 1159054-54-2

1159054-55-3 1159054-56-4 1159054-57-5

RL: MOA (Modifier or additive use); PRPH (Prophetic); TEM (Technical or engineered material use); USES (Uses)

(electroluminescent anthracene diamine derivs. and organic electroluminescent devices and solar cells using them)

IT 1159054-58-6 1159054-59-7 1159054-60-0 1159054-61-1  
 1159054-62-2 1159054-63-3 1159054-64-4 1159054-65-5  
 1159054-66-6 1159054-67-7 1159054-68-8 1159054-69-9  
 1159054-70-2 1159054-71-3 1159054-72-4 1159054-73-5  
 1159054-74-6 1159054-75-7 1159054-76-8 1159054-77-9  
 1159054-78-0 1159054-79-1 1159054-80-4 1159054-81-5  
 1159054-82-6 1159054-83-7 1159054-84-8 1159054-85-9  
 1159054-86-0 1159054-87-1 1159054-88-2 1159054-89-3  
 1159054-90-6 1159054-91-7 1159054-92-8 1159054-93-9  
 1159054-94-0 1159054-95-1 1159054-96-2 1159054-97-3  
 1159054-98-4 1159054-99-5 1159055-00-1 1159055-01-2  
 1159055-02-3 1159055-04-5 1159055-05-6 1159055-06-7  
 1159055-07-8 1159055-08-9 1159055-09-0 1159055-10-3  
 1159055-11-4 1159055-12-5 1159055-13-6 1159055-14-7  
 1159055-15-8 1159055-16-9 1159055-17-0 1159055-18-1  
 1159055-19-2 1159055-20-5 1159055-21-6 1159055-22-7  
 1159055-23-8 1159055-24-9 1159055-26-1 1159055-27-2  
 1159055-28-3 1159055-29-4 1159055-30-7 1159055-31-8  
 1159055-32-9 1159055-33-0 1159055-34-1 1159055-35-2  
 1159055-37-4 1159055-38-5 1159055-39-6 1159055-40-9  
 1159055-41-0 1159055-42-1 1159055-43-2 1159055-44-3  
 1159055-45-4 1159055-46-5 1159055-49-8 1159055-50-1  
 1159055-51-2 1159055-52-3 1159055-53-4 1159055-54-5  
 1159055-55-6 1159055-56-7 1159055-57-8 1159055-59-0  
 1159055-60-3 1159055-61-4 1159055-62-5 1159055-63-6  
 1159055-64-7 1159055-65-8 1159055-66-9 1159055-67-0  
 1159055-69-2 1159055-70-5 1159055-71-6 1159055-72-7  
 1159055-73-8 1159055-74-9 1159055-75-0 1159055-76-1  
 1159055-77-2 1159055-78-3 1159055-79-4 1159055-80-7  
 1159055-81-8 1159055-83-0 1159055-84-1 1159055-85-2  
 1159055-86-3 1159055-87-4 1159055-88-5 1159055-89-6  
 1159055-90-9 1159055-91-0 1159055-92-1 1159055-93-2  
 1159055-95-4 1159055-96-5 1159055-97-6 1159055-99-8  
 1159056-00-4 1159056-01-5 1159056-02-6 1159056-03-7  
 1159056-04-8 1159056-06-0 1159056-07-1 1159056-08-2  
 1159056-09-3 1159056-10-6 1159056-11-7 1159056-12-8  
 1159056-13-9 1159056-14-0 1159056-15-1 1159056-16-2  
 1159056-17-3 1159056-18-4 1159056-19-5 1159056-21-9  
 1159056-22-0 1159056-23-1 1159056-26-4 1159056-27-5  
 1159056-28-6 1159056-29-7 1159056-30-0 1159056-31-1  
 1159056-32-2 1159056-33-3 1159056-35-5 1159056-36-6  
 1159056-37-7 1159056-38-8 1159056-39-9 1159056-40-2  
 1159056-41-3 1159056-42-4 1159056-43-5 1159056-44-6  
 1159056-45-7 1159056-46-8 1159056-47-9 1159056-48-0  
 1159056-50-4 1159056-51-5 1159056-52-6 1159056-53-7  
 1159056-54-8 1159056-55-9 1159056-56-0 1159056-57-1  
 1159056-58-2 1159056-59-3 1159056-61-7 1159056-62-8  
 1159056-63-9 1159056-64-0 1159056-65-1 1159056-66-2  
 1159056-67-3 1159056-68-4 1159056-69-5 1159056-70-8  
 1159056-71-9 1159056-72-0 1159056-73-1 1159056-74-2  
 1159056-75-3 1159056-76-4 1159056-77-5 1159056-78-6  
 1159056-80-0 1159056-81-1 1159056-82-2 1159056-83-3  
 1159056-84-4 1159056-85-5 1159056-86-6 1159056-87-7

1159056-88-8	1159056-89-9	1159056-90-2	1159056-92-4
1159056-93-5	1159056-94-6	1159056-95-7	1159056-96-8
1159056-97-9	1159056-98-0	1159056-99-1	1159057-00-7
1159057-01-8	1159057-02-9	1159057-03-0	1159057-04-1
1159057-05-2	1159057-06-3	1159057-07-4	1159057-09-6
1159057-10-9	1159057-11-0	1159057-12-1	

RL: MOA (Modifier or additive use); PRPH (Prophetic); TEM (Technical or engineered material use); USES (Uses)

(electroluminescent anthracene diamine derivs. and organic electroluminescent devices and solar cells using them)

IT	1159057-13-2	1159057-14-3	1159057-15-4	1159057-16-5
	1159057-17-6	1159057-18-7	1159057-20-1	1159057-21-2
	1159057-22-3	1159057-23-4	1159057-24-5	1159057-25-6
	1159057-26-7	1159057-27-8	1159057-28-9	1159057-29-0
	1159057-30-3	1159057-32-5	1159057-33-6	1159057-34-7
	1159057-35-8	1159057-36-9	1159057-37-0	1159057-38-1
	1159057-39-2	1159057-40-5	1159057-41-6	1159057-42-7
	1159057-43-8	1159057-44-9	1159057-45-0	1159057-46-1
	1159057-47-2	1159057-48-3	1159057-49-4	1159057-50-7
	1159057-51-8	1159057-52-9	1159057-53-0	1159057-54-1
	1159057-55-2	1159057-56-3	1159057-57-4	1159057-58-5
	1159057-59-6	1159057-60-9	1159057-61-0	1159057-62-1
	1159057-63-2	1159057-64-3	1159057-65-4	1159057-66-5
	1159057-67-6	1159057-68-7	1159057-69-8	1159057-70-1
	1159057-71-2	1159057-72-3	1159057-73-4	1159057-74-5
	1159057-75-6	1159057-76-7	1159057-77-8	1159057-78-9
	1159057-80-3	1159057-81-4	1159057-82-5	1159057-83-6
	1159057-84-7	1159057-85-8	1159057-86-9	1159057-87-0
	1159057-88-1	1159057-89-2	1159057-90-5	1159057-92-7
	1159057-93-8	1159057-94-9	1159057-95-0	1159057-96-1
	1159057-97-2	1159057-98-3	1159057-99-4	1159058-00-0
	1159058-01-1	1159058-02-2	1159058-03-3	1159058-04-4
	1159058-05-5	1159058-06-6	1159058-07-7	1159058-08-8
	1159058-09-9	1159058-10-2	1159058-11-3	1159058-12-4
	1159058-13-5	1159058-14-6	1159058-15-7	1159058-16-8
	1159058-17-9	1159058-18-0	1159058-19-1	1159058-20-4
	1159058-21-5	1159058-22-6	1159058-23-7	1159058-24-8
	1159058-25-9	1159058-26-0	1159058-27-1	1159058-28-2
	1159058-29-3	1159058-30-6	1159058-31-7	1159058-32-8
	1159058-33-9	1159058-34-0	1159058-35-1	1159058-36-2
	1159058-37-3	1159058-38-4	1159058-39-5	1159058-40-8
	1159058-41-9	1159058-42-0	1159058-43-1	1159058-44-2
	1159058-45-3	1159058-46-4	1159058-47-5	1159058-48-6
	1159058-49-7	1159058-50-0	1159058-51-1	1159058-52-2
	1159058-53-3	1159058-54-4	1159058-55-5	1159058-56-6
	1159058-57-7	1159058-58-8	1159058-59-9	1159058-60-2
	1159058-61-3	1159058-62-4	1159058-63-5	1159058-64-6
	1159058-65-7	1159058-66-8	1159058-67-9	1159058-68-0
	1159058-69-1	1159058-70-4	1159058-71-5	1159058-72-6
	1159058-73-7	1159058-74-8	1159058-75-9	1159058-76-0
	1159058-77-1	1159058-78-2	1159058-79-3	1159058-80-6
	1159058-81-7	1159058-82-8	1159058-83-9	1159058-84-0
	1159058-85-1	1159058-86-2	1159058-87-3	1159058-88-4
	1159058-89-5	1159058-90-8	1159058-91-9	1159058-92-0
	1159058-93-1	1159058-94-2	1159058-95-3	1159058-96-4
	1159058-97-5	1159058-98-6	1159058-99-7	1159059-00-3
	1159059-01-4	1159059-02-5	1159059-03-6	1159059-04-7
	1159059-05-8	1159059-06-9	1159059-07-0	1159059-08-1
	1159059-09-2	1159059-10-5	1159059-11-6	1159059-12-7
	1159059-13-8	1159059-14-9	1159059-15-0	1159059-16-1

1159059-17-2	1159059-18-3	1159059-19-4	1159059-20-7
1159059-21-8	1159059-22-9	1159059-23-0	1159059-24-1
1159059-25-2	1159059-26-3	1159059-27-4	1159059-28-5
1159059-29-6	1159059-30-9	1159059-31-0	1159059-33-2
1159059-34-3	1159059-35-4	1159059-36-5	1159059-37-6
1159059-38-7	1159059-39-8	1159059-40-1	1159059-41-2
1159059-42-3	1159059-43-4	1159059-45-6	1159059-46-7
1159059-47-8	1159059-48-9	1159059-49-0	1159059-50-3
1159059-51-4	1159059-52-5	1159059-53-6	

RL: MOA (Modifier or additive use); PRPH (Prophetic); TEM (Technical or engineered material use); USES (Uses)

(electroluminescent anthracene diamine derivs. and organic electroluminescent devices and solar cells using them)

IT	1159059-54-7	1159059-56-9	1159059-57-0	1159059-58-1
	1159059-59-2	1159059-60-5	1159059-61-6	1159059-62-7
	1159059-64-9	1159059-65-0	1159059-66-1	1159059-67-2
	1159059-70-7	1159059-72-9	1159059-74-1	1159059-76-3
	1159059-78-5	1159059-80-9	1159059-82-1	1159059-83-2
	1159059-84-3	1159059-85-4	1159059-86-5	1159059-87-6
	1159059-88-7	1159059-89-8	1159059-90-1	1159059-92-3
	1159059-95-6	1159059-97-8	1159059-99-0	1159060-01-1
	1159060-03-3	1159060-04-4	1159060-06-6	1159060-09-9
	1159060-12-4	1159060-14-6	1159060-16-8	1159060-17-9
	1159060-19-1	1159060-20-4	1159060-21-5	1159060-22-6
	1159060-23-7	1159060-24-8	1159060-26-0	1159060-27-1
	1159060-28-2	1159060-29-3	1159060-30-6	1159060-31-7
	1159060-32-8	1159060-33-9	1159060-34-0	1159060-35-1
	1159060-36-2	1159060-37-3	1159060-38-4	1159060-39-5
	1159060-40-8	1159060-41-9	1159060-42-0	1159060-44-2
	1159060-45-3	1159060-46-4	1159060-47-5	1159060-48-6
	1159060-49-7	1159060-50-0	1159060-51-1	1159060-52-2
	1159060-53-3	1159060-54-4	1159060-55-5	1159060-56-6
	1159060-57-7	1159060-58-8	1159060-59-9	1159060-60-2
	1159060-61-3	1159060-62-4	1159060-64-6	1159060-65-7
	1159060-66-8	1159060-67-9	1159060-68-0	1159060-69-1
	1159060-70-4	1159060-71-5	1159060-72-6	1159060-73-7
	1159060-74-8	1159060-75-9	1159060-76-0	1159060-77-1
	1159060-78-2	1159060-79-3	1159060-80-6	1159060-81-7
	1159060-82-8	1159060-83-9	1159060-84-0	1159060-85-1
	1159060-86-2	1159060-87-3	1159060-88-4	1159060-89-5
	1159060-90-8	1159060-91-9	1159060-92-0	1159060-93-1
	1159060-94-2	1159060-95-3	1159060-96-4	1159060-97-5
	1159060-98-6	1159060-99-7	1159061-00-3	1159061-01-4
	1159061-02-5	1159061-03-6	1159061-04-7	1159061-05-8
	1159061-06-9	1159061-07-0	1159061-08-1	1159061-09-2
	1159061-10-5	1159061-11-6	1159061-12-7	1159061-13-8
	1159061-14-9	1159061-15-0	1159061-16-1	1159061-17-2
	1159061-18-3	1159061-19-4	1159061-20-7	1159061-21-8
	1159061-22-9	1159061-23-0	1159061-24-1	1159061-25-2
	1159061-27-4	1159061-28-5	1159061-30-9	1159061-31-0
	1159061-32-1	1159061-33-2	1159061-34-3	1159061-35-4
	1159061-36-5	1159061-37-6	1159061-38-7	1159061-39-8
	1159061-40-1	1159061-41-2	1159061-42-3	1159061-43-4
	1159061-44-5	1159061-45-6	1159061-46-7	1159061-47-8
	1159061-48-9	1159061-49-0	1159061-50-3	1159061-51-4
	1159061-52-5	1159061-53-6	1159061-54-7	1159061-55-8
	1159061-56-9	1159061-57-0	1159061-58-1	1159061-59-2
	1159061-60-5	1159061-61-6	1159061-62-7	1159061-63-8
	1159061-64-9	1159061-65-0	1159061-66-1	1159061-67-2
	1159061-68-3	1159061-69-4	1159061-70-7	1159061-71-8

1159061-72-9	1159061-73-0	1159061-74-1	1159061-75-2
1159061-76-3	1159061-77-4	1159061-78-5	1159061-79-6
1159061-80-9	1159061-81-0	1159061-82-1	1159061-83-2
1159061-84-3	1159061-85-4	1159061-86-5	1159061-87-6
1159061-88-7	1159061-89-8	1159061-90-1	1159061-91-2
1159061-92-3	1159061-93-4	1159061-94-5	1159061-95-6
1159061-96-7	1159061-97-8	1159061-98-9	1159061-99-0
1159062-00-6	1159062-01-7	1159062-02-8	1159062-03-9
1159062-04-0	1159062-05-1	1159062-06-2	1159062-07-3
1159062-08-4	1159062-09-5	1159062-10-8	1159062-11-9
1159062-12-0	1159062-13-1	1159062-14-2	1159062-15-3
1159062-16-4	1159062-17-5	1159062-18-6	

RL: MOA (Modifier or additive use); PRPH (Prophetic); TEM (Technical or engineered material use); USES (Uses)

(electroluminescent anthracene diamine derivs. and organic electroluminescent devices and solar cells using them)

IT	1159062-19-7	1159062-20-0	1159062-21-1	1159062-22-2
	1159062-23-3	1159062-24-4	1159062-25-5	1159062-26-6
	1159062-27-7	1159062-28-8	1159062-29-9	1159062-30-2
	1159062-31-3	1159062-32-4	1159062-33-5	1159062-34-6
	1159062-35-7	1159062-36-8	1159062-37-9	1159062-38-0
	1159062-40-4	1159062-41-5	1159062-42-6	1159062-43-7
	1159062-44-8	1159062-45-9	1159062-46-0	1159062-47-1
	1159062-48-2	1159062-49-3	1159062-50-6	1159062-51-7
	1159062-52-8	1159062-53-9	1159062-54-0	1159062-55-1
	1159062-56-2	1159062-57-3	1159062-58-4	1159062-59-5
	1159062-60-8	1159062-61-9	1159062-62-0	1159062-63-1
	1159062-64-2	1159062-65-3	1159062-66-4	1159062-67-5
	1159062-68-6	1159062-69-7	1159062-70-0	1159062-71-1
	1159062-72-2	1159062-73-3	1159062-74-4	1159062-75-5
	1159062-76-6	1159062-77-7	1159062-78-8	1159062-79-9
	1159062-80-2	1159062-81-3	1159062-82-4	1159062-83-5
	1159062-84-6	1159062-85-7	1159062-86-8	1159062-87-9
	1159062-88-0	1159062-89-1	1159062-90-4	1159062-91-5
	1159062-92-6	1159062-93-7	1159062-94-8	1159062-95-9
	1159062-96-0	1159062-97-1	1159062-98-2	1159062-99-3
	1159063-00-9	1159063-01-0	1159063-02-1	1159063-03-2
	1159063-04-3	1159063-05-4	1159063-06-5	1159063-07-6
	1159063-08-7	1159063-09-8	1159063-10-1	1159063-11-2
	1159063-12-3	1159063-13-4	1159063-14-5	1159063-15-6
	1159063-16-7	1159063-17-8	1159063-18-9	1159063-19-0
	1159063-20-3	1159063-21-4	1159063-22-5	1159063-23-6
	1159063-24-7	1159063-25-8	1159063-26-9	1159063-27-0
	1159063-28-1	1159063-29-2	1159063-30-5	1159063-31-6
	1159063-32-7	1159063-33-8	1159063-34-9	1159063-35-0
	1159063-36-1	1159063-37-2	1159063-38-3	1159063-39-4
	1159063-40-7	1159063-41-8	1159063-42-9	1159063-43-0
	1159063-44-1	1159063-45-2	1159063-46-3	1159063-47-4
	1159063-48-5	1159063-49-6	1159063-50-9	1159063-51-0
	1159063-52-1	1159063-53-2	1159063-54-3	1159063-55-4
	1159063-56-5	1159063-57-6	1159063-58-7	1159063-59-8
	1159063-60-1	1159063-61-2	1159063-62-3	1159063-63-4
	1159063-64-5	1159063-65-6	1159063-66-7	1159063-67-8
	1159063-68-9	1159063-69-0	1159063-70-3	1159063-71-4
	1159063-72-5	1159063-73-6	1159063-74-7	1159063-75-8
	1159063-76-9	1159063-77-0	1159063-78-1	1159063-79-2
	1159063-80-5	1159063-81-6	1159063-82-7	1159063-83-8
	1159063-84-9	1159063-85-0	1159063-86-1	1159063-87-2
	1159063-88-3	1159063-89-4	1159063-90-7	1159063-91-8
	1159063-92-9	1159063-93-0	1159063-94-1	1159063-95-2

1159063-96-3	1159063-97-4	1159063-98-5	1159063-99-6
1159064-00-2	1159064-01-3	1159064-02-4	1159064-03-5
1159064-04-6	1159064-05-7	1159064-06-8	1159064-07-9
1159064-08-0	1159064-09-1	1159064-10-4	1159064-11-5
1159064-12-6	1159064-13-7	1159064-14-8	1159064-15-9
1159064-16-0	1159064-17-1	1159064-18-2	1159064-19-3
1159064-20-6	1159064-21-7	1159064-22-8	1159064-23-9
1159064-24-0	1159064-25-1	1159064-26-2	1159064-27-3
1159064-28-4	1159064-29-5	1159064-30-8	1159064-31-9
1159064-32-0	1159064-33-1	1159064-34-2	1159064-35-3
1159064-36-4	1159064-37-5	1159064-38-6	1159064-39-7
1159064-40-0	1159064-41-1	1159064-42-2	1159064-43-3
1159064-44-4	1159064-45-5	1159064-46-6	1159064-47-7
1159064-48-8	1159064-49-9	1159064-50-2	1159064-51-3
1159064-52-4	1159064-53-5	1159064-54-6	

RL: MOA (Modifier or additive use); PRPH (Prophetic); TEM (Technical or engineered material use); USES (Uses)

(electroluminescent anthracene diamine derivs. and organic electroluminescent devices and solar cells using them)

IT	1159064-55-7	1159064-56-8	1159064-57-9	1159064-58-0
	1159064-59-1	1159064-60-4	1159064-61-5	1159064-62-6
	1159064-63-7	1159064-64-8	1159064-65-9	1159064-66-0
	1159064-67-1	1159064-69-3	1159064-70-6	1159064-71-7
	1159064-72-8	1159064-73-9	1159064-74-0	1159064-75-1
	1159064-76-2	1159064-77-3	1159064-78-4	1159064-79-5
	1159064-80-8	1159064-81-9	1159064-82-0	1159064-83-1
	1159064-84-2	1159064-85-3	1159064-86-4	1159064-87-5
	1159064-88-6	1159064-89-7	1159064-90-0	1159064-91-1
	1159064-92-2	1159064-93-3	1159064-94-4	1159064-95-5
	1159064-96-6	1159064-97-7	1159064-98-8	1159064-99-9
	1159065-00-5	1159065-01-6	1159065-02-7	1159065-03-8
	1159065-04-9	1159065-05-0	1159065-06-1	1159065-07-2
	1159065-08-3	1159065-09-4	1159065-10-7	1159065-11-8
	1159065-12-9	1159065-13-0	1159065-14-1	1159065-15-2
	1159065-16-3	1159065-17-4	1159065-18-5	1159065-19-6
	1159065-20-9	1159065-21-0	1159065-22-1	1159065-23-2
	1159065-24-3	1159065-25-4	1159065-26-5	1159065-27-6
	1159065-28-7	1159065-29-8	1159065-30-1	1159065-31-2
	1159065-32-3	1159065-33-4	1159065-34-5	1159065-35-6
	1159065-36-7	1159065-37-8	1159065-38-9	1159065-39-0
	1159065-40-3	1159065-41-4	1159065-42-5	1159065-43-6
	1159065-44-7	1159065-45-8	1159065-46-9	1159065-47-0
	1159065-48-1	1159065-49-2	1159065-50-5	1159065-51-6
	1159065-52-7	1159065-53-8	1159065-54-9	1159065-55-0
	1159065-56-1	1159065-57-2	1159065-58-3	1159065-59-4
	1159065-60-7	1159065-61-8	1159065-62-9	1159065-63-0
	1159065-64-1	1159065-65-2	1159065-66-3	1159065-67-4
	1159065-68-5	1159065-69-6	1159065-70-9	1159065-71-0
	1159065-72-1	1159065-73-2	1159065-74-3	1159065-75-4
	1159065-76-5	1159065-77-6	1159065-78-7	1159065-79-8
	1159065-80-1	1159065-81-2	1159065-82-3	1159065-83-4
	1159065-84-5	1159065-85-6	1159065-86-7	1159065-87-8
	1159065-88-9	1159065-89-0	1159065-90-3	1159065-91-4
	1159065-92-5	1159065-93-6	1159065-94-7	1159065-95-8
	1159065-96-9	1159065-97-0	1159065-98-1	1159065-99-2
	1159066-00-8	1159066-01-9	1159066-02-0	1159066-03-1
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RL: MOA (Modifier or additive use); PRPH (Prophetic); TEM (Technical or engineered material use); USES (Uses)

(electroluminescent anthracene diamine derivs. and organic electroluminescent devices and solar cells using them)

IT	1159066-91-7	1159066-92-8	1159066-93-9	1159066-94-0
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RL: MOA (Modifier or additive use); PRPH (Prophetic); TEM (Technical or engineered material use); USES (Uses)

(electroluminescent anthracene diamine derivs. and organic electroluminescent devices and solar cells using them)

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1159070-83-3 1159070-84-4 1159070-87-7

RL: MOA (Modifier or additive use); PRPH (Prophetic); TEM (Technical or engineered material use); USES (Uses)

(electroluminescent anthracene diamine derivs. and organic electroluminescent devices and solar cells using them)

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RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)

(electroluminescent anthracene diamine derivs. and organic electroluminescent devices and solar cells using them)

OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (4 CITINGS)

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L22 ANSWER 3 OF 3 HCPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2005:1126669 HCPLUS Full-text

DOCUMENT NUMBER: 143:405909

TITLE: Preparation of benzimidazole derivatives for use in organic electroluminescent elements  
Kawamura, Masahiro; Yamamoto, Hiroshi; Hosokawa, Chishio

INVENTOR(S): Idemitsu Kosan Co., Ltd., Japan

PATENT ASSIGNEE(S): PCT Int. Appl., 95 pp.

SOURCE: CODEN: PIXXD2

DOCUMENT TYPE: Patent

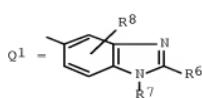
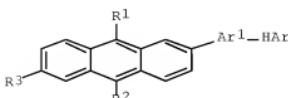
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005097756	A1	20051020	WO 2005-JP6605	20050404
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
EP 1734038	A1	20061220	EP 2005-728853	20050404
EP 1734038	B1	20091104		
R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR				
AT 447558	T	20091115	AT 2005-728853	20050404
US 20070200490	A1	20070830	US 2005-594323	20050927
KR 2007023676	A	20070228	KR 2006-720721	20061002
IN 2006CN03702	A	20070615	IN 2006-CN3702	20061006
CN 101384560	A	20090311	CN 2005-80018269	20061204
RITY APPLN. INFO.:			JP 2004-112799	A 20040407
			WO 2005-JP6605	W 20050404

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT  
OTHER SOURCE(S): MARPAT 143:405909  
GI



AB The title compds., e.g. I [R1 - R3 = substituent; Ar1 = single bond, divalent connecting group; HAr = Q1, etc.; R6 - R8 = substituent] are prepared. Thus, 1,2-diphenyl-5-[4-(9,10-diphenylanthracen-2-yl)phenyl]-1H-benzimidazole was prepared in a multistep process from 2-aminoanthraquinone. The high luminescent efficiency of organic electroluminescent elements containing compds. of this invention was demonstrated.

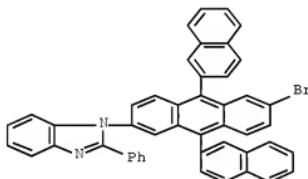
IT 867044-34-6P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation of benzimidazole derivs. for use in organic electroluminescent elements)

RN 867044-34-6 HCPLUS

CN 1H-Benzimidazole, 1-(6-bromo-9,10-di-2-naphthalenyl-2-anthracenyl)-2-phenyl- (CA INDEX NAME)



IPCI C07D0235-08 [ICM, 7]; C07D0235-18 [ICS, 7]; C07D0235-20 [ICS, 7]; C07D0235-00 [ICS, 7,C\*]; C09K0011-06 [ICS, 7]; H05B0033-14 [ICS, 7]; H05B0033-22 [ICS, 7]

IPCR C07D0235-00 [I,C\*]; C07D0235-08 [I,A]; C07D0235-18 [I,A]; C07D0235-20 [I,A]; C07D0401-00 [I,C\*]; C07D0401-04 [I,A]; C07D0401-14 [I,A]; C09K0011-06 [I,C\*]; C09K0011-06 [I,A]; H01L0051-00 [I,C\*]; H01L0051-00 [I,A]; H01L0051-50 [N,C\*]; H01L0051-50 [N,A]; H05B0033-14 [I,C\*]; H05B0033-14 [I,A]; H05B0033-22 [I,C\*]; H05B0033-22 [I,A]

CC 28-9 (Heterocyclic Compounds (More Than One Hetero Atom))

Section cross-reference(s): 73

IT 572-83-8P, 2-Bromoanthraquinone 633-70-5P 16588-25-3P  
 53484-26-7P 58476-59-8P 201731-79-5P 474688-75-0P  
 474688-76-1P 561064-15-1P 597553-98-5P 760212-55-3P  
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 867044-32-4P 867044-33-5P 867044-34-6P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation of benzimidazole derivs. for use in organic electroluminescent elements)

IT 867044-03-9P 867044-04-0P 867044-05-1P 867044-06-2P  
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 867044-18-6P 867044-19-7P 867044-20-0P 867044-21-1P

867044-22-2P 867044-23-3P 867044-24-4P  
 867044-25-5P

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (preparation of benzimidazole derivs. for use in organic electroluminescent elements)

OS.CITING REF COUNT: 12 THERE ARE 12 CAPLUS RECORDS THAT CITE THIS RECORD (25 CITINGS)

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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(FILE 'HOME' ENTERED AT 14:40:47 ON 23 JUL 2010)

FILE 'HCAPLUS' ENTERED AT 14:45:17 ON 23 JUL 2010  
 E US20070200490/PN

L1 1 S E3  
 SEL RN

FILE 'REGISTRY' ENTERED AT 14:46:52 ON 23 JUL 2010  
 L2 68 S E1-68

FILE 'LREGISTRY' ENTERED AT 16:27:50 ON 23 JUL 2010  
 L3 STR

FILE 'REGISTRY' ENTERED AT 16:34:14 ON 23 JUL 2010  
 L4 50 S L3  
 L5 SCR 2049  
 L6 50 S L3 NOT L5  
 L7 2514 S L3 NOT L5 FUL  
 L8 24 S L2 AND L7  
 SAV L7 CLA323/A

FILE 'LREGISTRY' ENTERED AT 16:35:32 ON 23 JUL 2010  
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